UNITED STATES DEPARTMENT OF AGRICULTURE
BUREAU OF ENTOMOLOGY AND PLANT QUARANTINE

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FOREST INSECT SURVEY - STANISLAUS NATIONAL FOREST

SEASON OF 1945

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Berkeley 4, California
November 16, 1945

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U. S. DEPARTMENT OF AGRICULTURE
BUREAU OF ENTOMOLOGY AND PLANT QUARANTINE
FOREST INSECT INVESTIGATIONS

FOREST INSECT SURVEY - STANISLAUS NATIONAL FOREST

SEASON OF 1945

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FIELD EXAMINATION.

Bureau of Entomology and Plant Quarantine, Forest Insect Laboratory, Berkeley, California. G. R. Struble, J. M. Miller. September 16 to 21, 1945.

AREAS EXAMINED (See map).

Parts of Mokelumne, Calaveras, Long Barn, Dardanelle, Clavey, Tuolumne and Coulterville areas.

SURVEY METHODS.

Roadside plots, road strips, red-top counts from view points.

CURRENT INSECT TRENDS AND LOSSES.

An upward trend in bark beetle activity is evident over the Forest as a whole. The general situation is endemic; however, in the northern parts, notably in the Mokelumne and Calaveras areas, the status of infestations has changed from normal to light since 1944. In the Pinecrest unit of the Longbarn area the same situation prevailed. Elsewhere in the Longbarn, Clavey, Tuolumne and Coulterville areas the situation was about the same as last year with some evidence of an upward trend in the Hunter Creek and Granite Creek drainages where a few scattered groups of trees were noted. The Tuolumne and Coulterville areas remained in much the same status as in 1944. Outside the Forest boundaries, notably along the west front from Avery to the North Fork of the Consummes River, scattered groups of trees were of such frequency to indicate a moderate infestation. Activity was most intense between elevations ranging from 3,000 to 4,500 feet. A summary of measured losses from established road strips and an estimate of losses by areas are given in Tables 1 and 2.

INSECTS INVOLVED IN CURRENT KILL.

Western pine beetle, Dendroctonus brevicomis Lec., in ponderosa pine; mountain pine beetle, D. monticolae Hopk., in sugar pine; pine engraver beetle, Ips confusus Lec., in some cases working in tops of trees and in ponderosa pine reproduction and small poles. D. brevicomis this year was noticeably more aggressive than for the past several years as evidenced by numerous attacks on every tree killed, and the grouping character of attacks which often resulted in the death of 10 or more trees to the group. Large broods were developed. Groupings occurred principally among the more vigorous second growth pine stands.

SPECIAL DEVELOPMENTS DURING SEASON.

The aggressive character of D. brevicomis attacks in 1945 was in contrast to 1944 infestations. This was especially true in the lower elevations where group killings were found. At higher elevations attacks were unusually heavy and the single trees killed were more numerous. Also there was a notable increase in mountain pine beetle activity in sugar pine compared with 1945. The cause is believed to be due in part to population increases of both insect species in their respective hosts as a result of breeding in 1944 windfalls, and to a general aggressive trend in beetle activity among both D. brevicomis and D. monticolae. While some damage was caused by Ips confusus it was relatively minor by comparison with the damage by the other two species. Damage caused by D. jeffreyi Hopk. in Jeffrey pine this year was negligible. Some post-logging damage to the reserve stands caused by slash breeding was in evidence in the Dorrington area, but was not serious.

AREAS REQUIRING SPECIAL ATTENTION.

The Pinecrest reserve stands are again threatened by infestations of moderate intensity in sugar pine and ponderosa pine. While the number of trees is not great, the trees killed during 1945 are large sized and it is evident that there were considerable population increases.

Although infestations in both the Mokelumne and Calaveras areas are light, the fact that there was an increase in insect activity over 1944 places both of these areas in a position of potential hazard. Also increased infestations in adjoining private lands under state jurisdiction are a threat to these areas. As such, each should be more closely watched than heretofore. In the Calaveras area, particularly in the vicinity of Calaveras Big Trees and slopes of the North Fork of the Stanislaus River, the situation borders on moderate infestation intensity.

CONTROL WORK UNDERTAKEN IN 1944-1945.

No control work was carried on during the past year inasmuch as infestations were so low in 1944 that it did not appear justified.

CONTROL RECOMMENDATIONS FOR 1945-1946.

Control work should be undertaken in the reserve stands of the Pinecrest, Strawberry and Cow Creek areas. It is estimated that between 75 and 100 large-sized ponderosa and sugar pines will require treatment during the late winter or early spring months. This threat to the reserve stands of developed areas is amplified by the recreational aspects attached to these stands.

Control work has been recommended within Calaveras State Park to suppress D. brevicomis and D. monticolae activity. This will be undertaken by the State. Federally owned lands surrounding the park also are light to moderately infested in parts. Assurance of the effectiveness of control work within the park will require cooperative participation by the U. S. Forest Service. Control is therefore recommended on Forest Service lands for a distance of at least one mile from park boundaries.

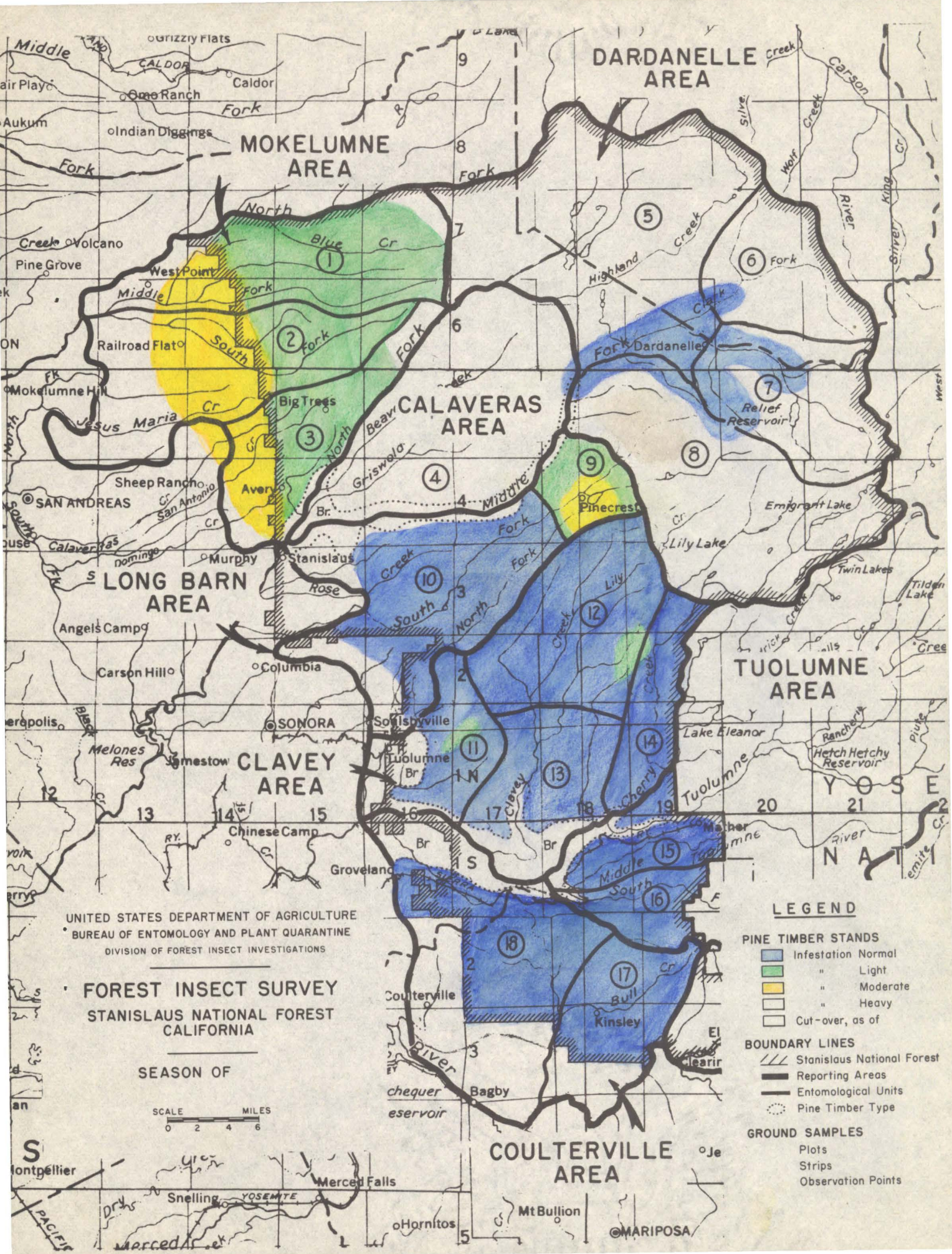
Table 1. Measured pine losses - roadside plots (RD) and road counts*
1943 - 1945

Area	Unit	Type of Sample	Acres	Comparative pine losses last three years							
				Trees				BM/Ac			
				1943	1944	1945		1943	1944	1945	
				PP & SP	PP & SP	PP	SP	PP & SP	PP & SP	PP	SP
Mokelumne	1 Hermit Springs	RD-1	448	5	3	6	1	13	23	41	13
		Road Count (West Point)	572		14	63			12	44	
	2 Blue Mountain	RD-2	288	3	0	2	0	67	0	10	0
		Road Count (Railroad Flat)	2,344		50	172			7	25	
	3 Dorrington	RD-3	544	4	3	1	0	42	21	17	0
Calaveras	3-4 Dorrington	Road Count (Beaver Cr. North Fork, Stanis. R.)	624		5	18	1		6	58	2
Dardanelle	8 Niagara	RD-4	216	3	4	1	1	6	12	13	42
Long Barn	9 Pinecrest	RD-5	168	3	0	0	2	43	0	0	109
		RD-6	192	0	0	4	2	0	0	26	46
		RD-7	104	0	0	0	1	0	0	0	90
		RD-8	160	4	1	2	4	60	1	45	228
		Road Count (CF&RES)	88		0	6	0		0	130	0
Clavey	13 Jawbone	Road Count (Bull Mdws.-Jawbone G.S.)	480		2	7	0		2	8	0
Coulterville	18 Buck Meadows	RD-9	440	3	4	3	1	7	6	8	1
		TOTAL (ALL AREAS)	13,668	25	86	285	13	238	90	425	531
						AVERAGE		26	6	30	44

*Volumes from road counts estimated.

Table 2. Estimated bark beetle losses during 1945 in commercial pine stands.

Unit No.	Name of Unit	Acreage	Trees
	Loss of 20 feet BM or less per acre (Normal Infestation)		
10	Mt. Knight	83,000	200
11	Westside	32,000	300
12	Dodge	39,000	150
13	Jawbone	26,000	150
14	Cherry Valley	13,000	50
15	Mather	13,000	130
16	South Fork	16,000	150
17	Bull Creek	25,000	300
18	Buck Meadows	51,000	400
	Loss of 21 to 30 feet BM per acre (Light Infestation)		
1	Hermit Springs	55,000	600
2	Blue Mountain	58,000	800
3	Dorrington	36,000	600
4	Griswold	64,000	900
9	Pinecrest	5,500	100
	Loss of 31 to 40 feet BM per acre (Moderate Infestation)		
3	Dorrington	1,000	50
9	Pinecrest	4,500	100


DARDANELLE AREA
MOKELUMNE AREA
CALAVERAS AREA
LONG BARN AREA
TUOLUMNE AREA
CLAVEY AREA
COULTERVILLE AREA
Middle Fork
North Fork
South Fork
Grizzly Flats
Caldor
Indian Diggings
Volcano
Pine Grove
West Point
Railroad Flat
Mokelumne Hill
Big Trees
Sheep Ranch
SAN ANDREAS
Avery
Murphy
Stanislaus
Angels Camp
Carson Hill
Columbia
SONORA
Sonora
Tuolumne
Jamestown
Chinese Camp
Groveland
Dardanelle
Pinecrest
Relief Reservoir
Emigrant Lake
Lily Lake
Twin Lakes
Tilden Lake
Lake Eleanor
Hetch Hetchy Reservoir
Coulterville
Kinsley
Bagby
Merced Falls
Snelling
Hornitos
Mt Bullion
MARIPOSA
UNITED STATES DEPARTMENT OF AGRICULTURE
BUREAU OF ENTOMOLOGY AND PLANT QUARANTINE
DIVISION OF FOREST INSECT INVESTIGATIONS
FOREST INSECT SURVEY
STANISLAUS NATIONAL FOREST
CALIFORNIA
SEASON OF
SCALE MILES
0 2 4 6
LEGEND
PINE TIMBER STANDS
Infestation Normal
" Light
" Moderate
" Heavy
Cut-over, as of
BOUNDARY LINES
Stanislaus National Forest
Reporting Areas
Entomological Units
Pine Timber Type
GROUND SAMPLES
Plots
Strips
Observation Points